“EFFECTIVENESS OF COMPUTER ASSISTED TEACHING ON THE KNOWLEDGE OF ANAEMIA AMONG ADOLESCENT GIRLS”

BY
MS.M.MANJAMBIGAI

A Dissertation Submitted to

THE TAMIL NADU Dr.MGR MEDICAL UNIVERSITY, CHENNAI

In Partial Fulfilment of

THE REQUIREMENT FOR THE AWARD OF DEGREE OF MASTER OF SCIENCE IN NURSING

OCTOBER -2014

CERTIFICATE

Certified that this is the bonafied work of

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“EFFECTIVENESS OF MUSTARD PLASTER ON KNEE PAIN AND INABILITY IN ELDERLY AT SELECTED OLD AGE HOME IN VELLORE”

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DECLARATION

I hereby declare that th present dissertation entitled **"EFFECTIVENESS OF COMPUTER ASSISTED TEACHING ON THE KNOWLEDGE OF ANEMIA AMONG ADOLESCENT GIRLS"** is the outcome of the original research work undertaken and carried out by me, under the guidance of **Prof.Sunitha Priyadharshini, M.Sc.,(N), M.Sc., Psychology,** Principal, Arun College of Nursing and **Mrs.Kalaiyarasi, M.Sc.,(N),** Assistant Professor in Community Health Nursing, Arun College of Nursing. I also declare that the material of this has not formed anyway, the basis for the award of any Degree or Diploma in this University or any other Universities.

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CHAPTER – I
INTRODUCTION

BACK GROUND OF THE STUDY

Anaemia is a term that indicates a low red blood cells count and a hemoglobin level less than 10 g/dl. It is not a disease but rather reflects a disease state or altered body functions. Physiologically anaemia exists when there is an insufficient amount of hemoglobin to deliver oxygen to the tissue.

Iron is of great importance in human nutrition. The adult human body contains between 3-49g of iron of which about 60-70 percent is present in the blood as circulating iron and the rest as storage iron. Each gram of hemoglobin contains about 3.34 mg of iron.

The iron requirement for adolescents , girls are 2.4 gms and boys 1.8 gms of iron (K.Park 2005). The report by WHO (2002) states that adolescents aged between 10-19yrs account for more than one fifth of the world populations in which over 1200 million accounting to 19% of the global populations are affected by nutritional anaemia. Similarly one half of the non-pregnant women and two thirds of pregnant women in developing countries have hemoglobin levels below 12 gms per deciliter.

Iron deficiency, anaemia is one of the primary cause for the wastage of human resource and subsequent degradation of the society. Girls often enter their active reproductive years in late adolescence with poor iron status. Iron deficiency can result in negative reproductive consequences associated with premature birth, low birth weight and maternal mortality.

Anaemia increases the risk of foetal mortality and morbidity. In India, 20 to 40 percent of maternal deaths are due to anaemia. The burden of anaemia is high though the remedy is so transparent for the health care personnel to take up the challenge.

World health organization (WHO 2002) reports that iron deficiency is the most common nutritional disorder in the world. As many as 4-5million people, [66-80%] of the world's population suffer from anaemia. Two million people over 30% of the world population suffer from anaemia mainly due to iron deficiency. In developing countries anaemia is mainly exacerbated by malaria, worm infestations and less dietary intake.

Iron deficiency anaemia in India is caused mainly due to inadequate reserves at birth and aggravation of precarious conditions through out by poor dietary intake, hookworm infestations, the dietary habits of rice consumption which has high phytate contents, intake of coffee and tea with food which has tannin, a potent inhibitor of iron absorption, menstruation, malaria, and other infections (WHO 1997).

The iron deficiency anemia reduces the work capacity of individuals and the entire population bringing serious economic consequences and obstacles to national development. By treating the anemia which prevails among the poorest and the least educated, who are the most vulnerable group to iron deficiency, the national productivity could be raised by 20% on the whole.

Table No. 1: Normal Hemoglobin values for the diagnosis of anaemia

	g/dl (Venous Blood)	**All ages mCHC (Percent)**
Adult males	13	34
Adult females	12	34
Non pregnant	11	34
Adult pregnant females	11	34
Children aged 6 months to 6 years	11	34
Children between 6 to 14 years	12	34

Source : (K.Park 2007)

Table No.2: Requirements of iron for different age group

Age group	Iron in mg that should be absorbed
Infant (5-12 months)	0.7
Children (1-12 yrs)	1.0
Adolescents (13-16 yrs)	Males 1.8
	Female 2.4
Adult males	0.9
Adult females Menstruation	2.8
Pregnancy First Half	0.8
Second Half	3.5
Lactation	2.4
Post – Menopause	0.7

Sources : (K.Park 2007)

Community health nurse has a major role in identifying the prevalence of anaemia, deworming the affected and high risk population, most important is to instigate the intake of iron rich diet among the people. So the investigator developed this study to determine the effectiveness of computer assisted teaching in improving the knowledge level among adolescent girls in selected schools at Poigai, Vellore District.

NEED FOR THE STUDY

The person is an unique individual who has specific needs, wants and abilities.

- ❖ The nurse as a care giver is in a position to identify the individual's needs.

- ❖ The investigator during her posting in the Poigai area found that many of the adolescent girls had anaemia and that could be easily corrected.

Kurz (2002) reported that a significant percentage of adolescents all over the world are anaemic, causing considerable health consequences. About 27% of adolescents are estimated to be anaemic in developing countries, compared to 6% in the developed countries. In India, it is relatively high with 55% of the adolescent population being affected.

John Beard (2000) quotes that adolescent is characterised by a large growth spurt and the acquisition of adult phenotypes and biologic rhythms. During this period the iron requirement increases dramastically as a result of expansion of blood volume, onset of menarchy and increase in lean body mass. The increased iron requirements are also associated with growth spurt and sexual maturation. The bio availability from diets in developing countries indicate a negative balance in female population. The low iron stores in these young women of reproductive age will make them susceptible to iron deficiency during pregnancy.

Alok Bhargava, Howarth Bouis and Nevin Scrimshaw (2001) conducted a comprehensive longitudinal study. The objective of the study was to identify the determinants which are related to the iron status. The determinants identified were hemoglobin concentration, dietary intake, nutritional status, socio economical factors and morbidities like hook worm infestations, and malaria. The study results proved the high significant association between the dietary intake, morbidity, socioeconomic factor and the hemoglobin concentration.

Ziegler Dalia Rose and Savin Seizher (1996) quotes that a number of dietary factors contribute to the increase the hemoglobin level in the blood. Increased intake of iron rich foods, and ascorbic acid the best known enhancer of iron absorption should be a consistent feature of diet while avoiding phytates and tannin, the potent inhibitors of iron. The bio

availability is reduced where the stable food is cereals like rice, maize, which has high phytate, Adequate folic acid content increases the hemoglobin level in blood.

Table No. 3: Current statistics on aneamia

	ICMR 1989	**Task force**	**NFHS-2**	**ICMR 2004**	**NFHS-3**
Pregnant Women	87.5	47-95	49.7	84.9	57.9
Lactation Mothers		77-95	56.4	-	-
Adolescent Girls		-	61.0	90.1	-
Pre School Children		30-95	74.3		79.2

Source : Sundar Lal (2009)

Keeping the above scenario on anaemia and its importance, the investigator felt that providing knowledge on this aspect the adolescent girls the further generation creators, the public health problem of anaemia can the reduced and there by reducing the IMR and MMR in developing countries.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of computer assisted teaching on the level of knowledge regading Anaemia among adolescent girls in selected schools at Poigai

OBJECTIVES

The objectives of the study were,

To assess the knowledge on anaemia among the adolescent girls in the intervention and non intervention group.

1) Determine the effectiveness of computer assisted teaching on the knowledge of anaemia among the adolescent girls.

2) Associate the level of knowledge on anaemia with selected background variables among the adolescent girls in both groups.

HYPOTHESIS

There is a significant increase in the level of knowledge on anaemia among the adolescent girls who receive computer assisted teaching than those who did not.

OPERATIONAL DEFINITIONS

Assess

The art of estimating the level of knowledge on anaemia among adolescent girls.

Effectiveness

The increased level of knowledge brought by the teaching of anaemia and is measured in terms of significant change.

Knowledge

The information obtained from the adolescent girls regarding anaemia and is measured using structured self administered questionnaire.

Anaemia

Decrease in oxygen carrying capacity of the red blood cells.

Computer - Assisted Teaching on Anaemia

It is an instructional package using laptop Modules on selected aspects of anaemia namely definition, causes, signs and symptoms, treatment, prevention and complications which lasts for 30 minutes.

Adolescent Girls

Girls who have attained menarche and are studying in 9th standard.

Assumptions

1) Health education promotes early health seeking behaviour.

2) Knowledge on health has an impact in reducing morbidity and mortality.

3) Usage of modern educational media enhances quick and effective practices.

Limitations

- ❖ The evaluation of teaching was limited to one post test administered one week after the teaching.
- ❖ The study was limited to 9th standard girls

CONCEPTUAL FRAME WORK BASED ON J.W. KENNY'S OPEN SYSTEM MODEL

The study was based on J W kenny's open system model. All living system are open, in that there is continual exchange of matter, energy and information. Open system has varying degree of interaction with the environment from which the system receives input and gives back output in the form of matter energy and information. Survival of all system must receive varying types and amounts of information matter and energy. The main concept of the open system are 'input', 'throughout' and 'output'. In open system model, 'input' refers to matter, energy and information that enter into the system through its boundary. 'Throughput' refers to processing where system transforms are energy matter and information and 'output' refers to matter energy and information that are processed. After processing input, the system

returns matter, energy, information to the environment in an altered state.

The present study shows lack of knowledge on anaemia before the computer assisted teaching. Input refers to the computer assisted teaching given to the adolescent girls on anaemia. Throughput is the process of transformation of knowledge instituted by the computer assisted teaching programme and output is the change in the knowledge of adolescent girls regarding anaemia which was measured through post test.

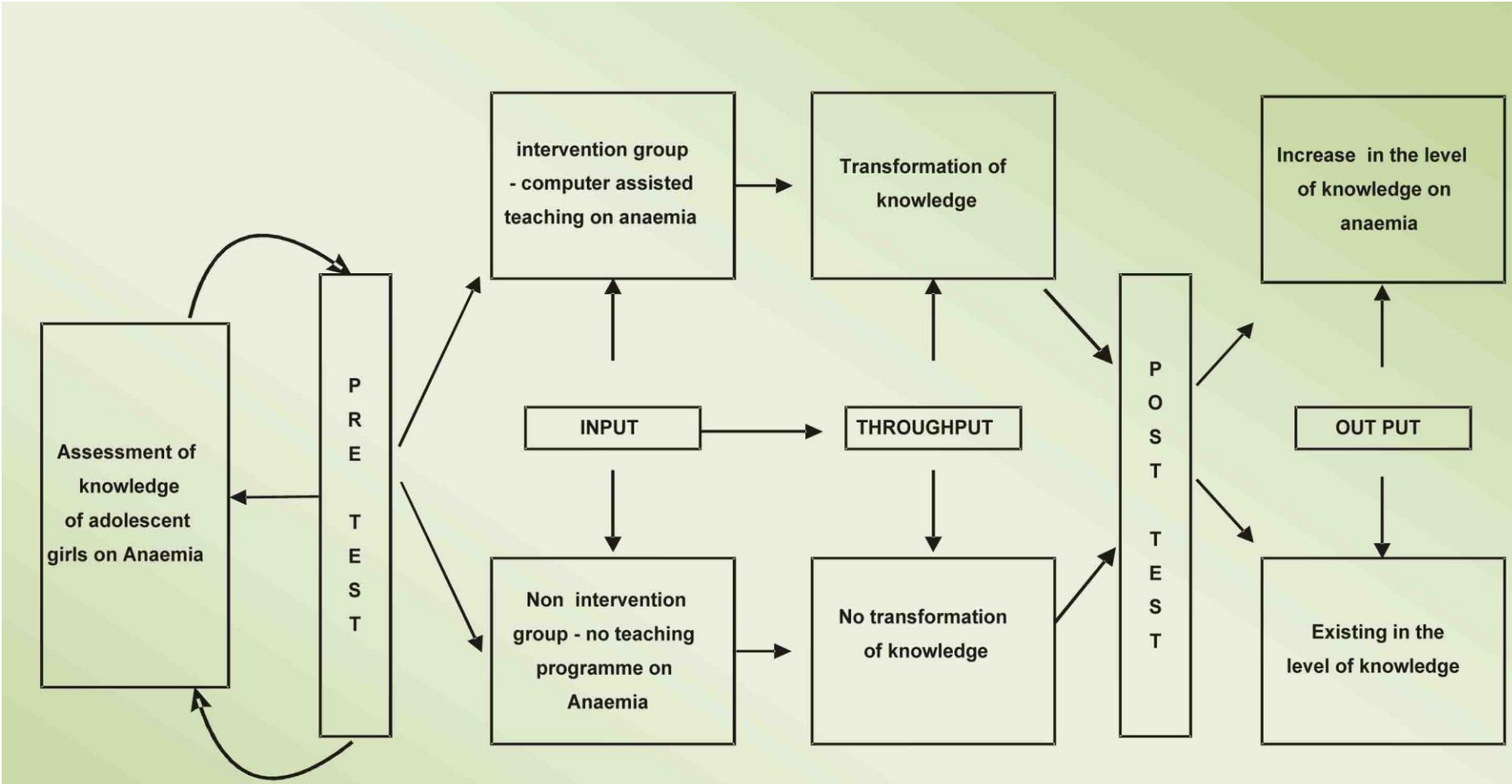

Figure 1 : Conceptual frame work based on JW Kenny's open systems model

CHAPTER – II
REVIEW OF LITERATURE

The review of literature is arranged in the following sections.

SECTION -A

It consists of reports and research studies on;

1) Physiology of Hemoglobin and Iron

2) Iron deficiency anaemia

3) Nutrition and Hemoglobin

4) Research related to the effect of nutrition on hemoglobin level

SECTION-B

Conceptual frame work.

SECTION-A

Physiology of Hemoglobin and Iron

Linda, Zucheir and Palmerkoch (2002) reported that hemoglobin is the major constituent of the iron. The hemoglobin in its structure has four heme and four globin chains. The chains provides an efficient mechanism to combine with oxygen without being oxidized. The hemoglobin plays a critical role in transfering oxygen from lungs to tissues.

The above mentioned study further quoted that adult men have about 3-6 grams of total body iron whereas the value in women is 2.4gms. Adult women have much lower amounts of iron in storage than men. Iron is highly conserved in the body, approximately 90% is recovered and reused every day and the rest is excreted mainly in the

bile. Dietary iron must be available to maintain iron balance to meet this 10% gap or else iron deficiency will set in.

Smetter Tylor and Noveas Rave (2002) reported that iron absorption is normally 1mg/day by the upper intestinal tract and is replaced by the same value. When iron loss exceeds 5mg/day, as likely during the reproductive years in women or due to other blood loss, iron absorption must be proportionately increased.

Robert Vande (2002) stated that the efficiency of iron absorption by adult with normal hemoglobin values averages between 5% to 15%. The iron content in food and other supplements range only 1-2mg and which is absorbed in a steady state although 10-15mg/day is ingested. There is an increased iron absorption during growth, blood loss or anaemic state.

Susan Yip and Dallman Kozhier (1998) reported that ascorbic acid enhance non-heme iron absorption especially well in women with low hemoglobin. Ascorbic acid is the most potent enhancer of iron absorption, forms a chelate with iron that remains soluble at the alkaline PH of the lower small intestine. Iron absorption is enhanced by co-ingestion of ascorbic acid as it reduces ferric to ferrous iron and it also binds or chelates the ferrous form which allows the two entities to be absorbed together at the brush border of the intestinal lining.

Linda Zucheir and Palmerkoch (2002) stated that foods with high phytate content have low iron bioavailability. Phytate is inosital hexophosphate, a substance that normally present in the fibre or bran compotent of rice, wheat, maize, peanuts, unprocessed whole grain products, walnuts and which chelates iron and reduces its absorption. Hence rice eaters would have less iron bioavailability and less iron absorption. Other dietary inhibitors of non haem in the form of plant

sources iron absorption which include tannic acid a constituent of tea and coffee, inhibits the iron uptake to considerable extent.

B. Iron deficiency Anaemia

W.H.O (2002) quotes that iron deficiency is the main cause of anaemia. Nine out of ten anaemia sufferers live in developing countries. On an average every second pregnant women is anaemic in many developing countries. Iron deficiency anaemia is aggravated by worm infestations which cause blood loss to some 2 billion people worldwide. Among pregnant women anaemia contributes to 20% of all maternal deaths. In endemic areas, malaria may be the primary cause for half of all severe anaemic cases.

W.H.O (1998) reports that anaemia affects two billion people worldwide mostly due to iron deficiency. It primarily affects women. The prevalence of anaemia is disproportionately high in developing countries due to poverty, inadequate diet, certain diseases, pregnancy and poor access to health services. Young people are particularly susceptible because of their rapid growth associated with high iron requirements.

W.H.O (1998) reports that 27% of adolescents are estimated to be anaemia in developing countries, compared to 6% in developed countries. Survival for women and children foundation in 1997 reported from a survey that 12-18 year old girls in rural India identified anaemic with a prevalence rate of 82.9% among girls in school and 92.7% among girls not in school.

Susan Yip and Dallman Kozhier (1998) quoted that girls often enter their active reproductive years in late adolescence with poor iron status. Many women in the world (atleast 25%) have their first child by the age of 19, As pregnancy requires more iron for increased blood

production, an iron deficit can result in negative reproductive consequences.

Sean Lynch (2002) reported that during pregnancy women in developing countries suffer from iron deficiency anaemia. It is also prevalent among adolescent girls because the growth spurt and onset of menstruation increases iron requirement. Women who conceive during or shortly after adolescence are likely to enter pregnancy with lower or absent stores of iron. Although supplementation will correct anaemia and increase iron stores in girls, the positive effect on iron status will be temporary if their diets do not contain adequate bio available iron. The author suggests that long term remedy for iron deficiency anaemia is the dietary supplementation.

Cheong, Kuizon and Tajaon (1995) conducted a study to reveal the relationship between dietary iron and menstrual blood loss in Filipino women. With an average menstrual cycle of 29 days the average iron loss was estimated to be 0.55mg/day. The effects of menstrual iron loss and dietary iron intake on iron status of menstruating women were examined using multiple regression analysis. The result suggests that iron intake was enough to run the iron lost in menstruation. Iron loss amounting above this continuously for a long period may lead to anaemia. The condition can be further aggravated by insufficient iron intake.

Gligen Mascie Taylor and Rosetta (1996) studied the hookworm related blood loss and its role in iron deficiency. The prevalence of iron deficiency anaemia increased steadily due to the intensity of a hook worm infection and increased intestinal blood loss. In the context of a poor diet as in many tropical countries hookworm related blood losses contributes dramastically to anaemia. In such contexts hookworm control is a flexible and essential component of anaemia control. Results

also revealed that the intestinal blood loss was strongly and linearly related to hookworm egg counts.

Lawless and Avirishi (1994) states that anaemia affects physical growth and mental development. Maternal anemia results in still birth and low birth babies. Other consequence include reduced levels of energy and productivity and impaired functioning of the immune system. During adolescence there is an increased need for iron due to growth spurts and especially girls have a continuing need to replace iron lost during menstruation.

Torres Guerra Carryovizea, Diez and Arteaga (1995) conducted a study to reveal the relationship of hemoglobin and nutrient concentration in middle class adolescents. School performance academic achievement index was calculated as the ratio of approved courses. Over the total the results revealed high prevalence of iron and folate deficiency predominantly in female adolescents. A positive correlation was found between iron status and academic achievement index. The finding revealed that the reduced hemoglobin might be due to inadequate dietary intake combined with parasitic infestation. These factors may contribute to an impairment of academic achievement. It will be important to assess iron and foliate status of the adolescents for normal and integral development of their cognitive and psychomotor functions.

Ortega, Gonz, Paz and Jim (1993) conducted a study to find out the influence of iron status on attention and intellectual performance of a population of Spanish adolescents. Dietetic hematologic and biochemical data were used to assess the iron status of a group of 64 adolescents. The results revealed that student who obtained higher scores in the school capability tests had also better parameter values. This was found significant for hemoglobin tests

C. Nutrition and Hemoglobin

Zlegier Dalia Rose and Savin Seizher (1999) stated that in normal adult there are 4 to 5 grams of iron (75%) of which 2.5 gms is in the form of hemoglobin, 25% is in the form of myoglobin (0.15gms) and as haem enzyme and non haem enzymes which are the functional iron. The remaining iron is stored as feritin, hemosiderin and transferin. The nutritional characteristics in relation to hemoglobin is that iron contains 75% of hemoglobin and hence iron rich diet implies to improve the hemoglobin levels in the individuals.

Ziegler Palia Rose and Savin Seizher (1999) quoted that iron absorption from food depends on the form of the iron and other constituents in the diet. Iron is absorbed both as haem and haem iron. Most iron is present as haem iron in animal foods and as ferrous form of iron in vegetables. Food is present as non haem complexes as ferric, bound to protein phytate, oxalates, phosphates and carbonates. Most of the iron is in a high molecular weight form and is less well absorbed than solublized iron. Binding to low molecular weight chelators like ascorbic acid, amino – acids sugars form soluble iron complexes and increases absorption.

Smelter Tylor and Noveas Rave (2000) stated that the best known enhancer of iron absorption is the vitamin C. The addition of even relatively small amount of vitamin C to food increases iron absorption from the entire meals.

D. Research studies related to the effect of nutrition and Hemoglobin

Yadav and Sehgal (2000) conducted a study on amaranth and spinach to find out its iron availability by nutritional supplement preparation. The ratio of amaranth spinach, Jaggery and Bengal gram in the supplement was 2:2:3:2, They also tested its iron availability after balancing and cooking. The results revealed an increase in the

hemoglobin serum ferritin levels and there was significant reduction in the oxalic acid and phytic acid contents. Thus cooking and balancing are good ways of preparing the supplement which reduce the antinutrient contents.

Vijalakshmi Savithir and Amirthaveni (2002) conducted a study to demonstrate the bio availability of bengal gram and its effect on the nutritional status of women. Women of two villages were screened for their hemoglobin status and anaemic women were selected. A bengal gram recipe including tomato was given to them. After supplementation the percentage of anaemia was reduced in the case of severely anaemic by 25.3% and in the case of moderately anaemia by 4.7% percent. The study suggests that iron status of women can be improved by supplementation of iron rich diet. This may prove to be a very effective way of combating the wide spread iron deficiency anaemia.

Bergaman, Gualberte and Weber (1999) conducted a study to improve the hemoglobin levels of adolescent girls and to determine the nutritional quality of the supplement, a wheat based soft cowpea pasta. The study was done in Northeast Brazil where cowpea is a staple food in diet of the people. The results revealed a significant increase in the hemoglobin levels. The quality of the pasta was improved on the addition of cowpea by increasing the protein content and iron content.

Shubhada and Shervani (2000) conducted a study to reveal the importance of consuming vitamin C rich foods to improve the hemoglobin levels. The study participants from Baroda city were given a mixed diet hosted with vitamin rich guava, citrus fruits, lemon Juice. At the end of the 9 months interventional trial there was a very significant rise in hemoglobin levels of the study participants.

Hilary, Tula and Uribe (2002) conducted a community based randomized behavioural and dietary intervention trial to improve dietary

intake and iron bioavailability of adolescent girls living in periurban areas of Lim, Pera. The results showed that there was a change in knowledge about anaemia and had improved dietary iron intake and there was a significant increase in hemoglobin levels after the dietary interventional trial.

CHAPTER – III
RESEARCH METHODOLOGY

Methodology is the most important part of any research study, which enables the researcher to form a blue print for the study undertaken. It involves a systematic procedure by which the researcher starts from the initial identification of the problem to its final conclusion.

This study was designed to assess the effectiveness of computer assisted teaching on anaemia among adolescent girls in selected schools at vellore district. This chapter presents the methodology adopted by the researcher for the study. It includes the research approach, the setting, population, sampling techniques, selection of tool development and description of the tool, content validity, reliability, data collection procedure and plan for analysis.

RESEARCH APPROACH

Research approach is the most significant point of any research. The appropriate choice of the research approach depends on the purpose of the study undertaken.

According to the Polit & Hungler experimental research is an extremely applied form of the research and involves finding out how well a programme, practice or policy is working. It's goal is to assess or evaluatae the success of the programme.

An experimental research is generally applied where the primary objective is to determine the extent to which a given procedure meets the demand results. In this study as the researcher wanted to assess the effectiveness of computer assisted teaching upon level of knowledge regarding anemia. An evaluative approach was used for this study.

RESEARCH DESIGN

In this study, the research design used was experimental design. A research design incorporates the most important methodological decision that an investigator makes in conducting a research study. It helps the investigator in the selection of subjects manipulation of independent variables and observation of the type of statistical method to be used to interpret the data. The selection of design depends upon the purpose of the study, research approach and variabl to be studied.

An experimental pretest and post test design was used.

	Measurement of dependent variable	**Manipulation independent variable**	**Measurement of dependent variables**
Experimental group	O1	X	O2
Control group	O1	-	O2

O – Observation or measurement

X –Computer assisted Teaching

O1- pre test

O2- Post test

SETTING :

The study was conducted in the Government High School at Poigai, Vellore District. This school is located 10 kms away from Arun college of Nursing. The total strength of the school is 1030 students with 21 teachers. The total strength of girls in 9^{th} standared is 90.

The investigator selected another Government girls high school at Poigai, Vellore district for control group. This school is located10 kms

away from Arun college of Nursing. It is a Government girls high school till 10th standard. The total school strength is 2500 students with 34 teachers and of girls students in 9th standard is 70.

POPULATION

The target population for this study was adolescent girls studying in 9th standard.

The accessible population is the list of population that the researcher finds in the study area. The accessible population in this study were adolescent girls studying in 9th standard at Poigai Government School.

SAMPLE

The sample consisted of adolescent girls studying in 9th standard at the selected schools.

SAMPLE SIZE

70 adolescent girls were selected randomly for the study based on the inclusion and exclusion criteria.

35 adolescent girls were selected for intervention group from poigai high school group.

35 adolescent girls were selected for Non intervention group from Poigai high school .

SAMPLING CRITERIA

Inclusion Criteria

1) Adolescent girls who read and write Tamil and English.

2) Adolescent girls who were studying in 9th standard.

Exclusion Criteria

1) Adolescent girls who were not willing to participate in the study

2) Adolescent girls who were absent on the day of study

DESCRIPTION OF THE INSTRUMENT

The instrument consists of two parts of structured self-administered questionnaire as described below.

Part-I: Consist of background variables of the adolescent girls which includes age in years, religion, parents education, occupation, monthly family income of the family, occupation, media, personnel providing health information.

Part-II: Consist of a questionnaire on knowledge related to anaemia that comprised of 25 multiple choice questions.

COMPUTER - ASSISTED TEACHING

Computer - assisted teaching programme consists of on instruction package module on anemia in laptop. It comprised the information on explanation of the term anemia, causes, signs and symptoms, management and complications.

The investigator prepared the instruction package module and the explanation was provided by the investigator using appropriate pictures in the laptop.

Teaching programme lasted for 30 minutes.

SCORING INTERPRETATION

The assessment was on the knowledge of anemia; The possible score was 25 and a score of 1 (one) was given for every correct answer and a score of 0(zero) was given for every wrong answer. The total scores ranged as follows

Adequate knowledge	=	76-100%
Moderately adequate knowledge	=	51-75%.
Inadequate knowledge	=	0-50%

VALIDITY AND RELIABILITY

The structured questionnaire was developed based on the review of literature and experts guidance. The tool and teaching plan was validated by nursing experts. The feasibility of the questionnaire and the teaching plan was also established through the pilot study. The reliability of the tool was tested by Split half method r value 0.9.

PILOT STUDY

The Pilot study was conducted in the government high school Poigai on the basis of the pilot study the tool was found to be feasible questionnaire and the validity and reliability of questionnaire where established for the main study.

DATA COLLECTION PROCEDURE

Official permission was obtained from ethical chairperson chairman of nursing education to conduct the study.

The period of data collection was for 4 weeks. Two schools were selected for the data collection, one for the intervention group and one school for the non intervention group. A sample of 35 students for teaching and 35 for the non teaching group were selected using simple random technique.

The study was conducted in 3 phases.

1st Phase: Samples of 35 students from the government high school,Poigai for the intervention groups and 35 students from the government high school at poigai for the non intervention group were

selected. The researcher initially established rapport with the study samples and assured confidentiality.

The purpose of the study was explained to samples. Pretest was conducted among both teaching and non teaching group for all the 70 students after obtained informed concent.

2nd Phase: After the pretest a computer assisted teaching was given to the intervention group .The 35 students of intervention group, were further divided into 2 groups each group consisting of 12-13 samples. Computer - assisted teaching was given to each group, using lecture cum discussion method. Each session of computer - assisted teaching lasted for about 30 minutes.

3rd Phase: Post test was conducted for intervention group and non intervention group. For the intervention group, post test was conducted 7 days after the computer - assisted teaching and also for non intervention group.

PLAN FOR DATA ANALYSIS

Statistics	Methods	Dissertation
Descriptive statistics	Frequency means and standard deviation	To assess the knowledge on anaemia among the adolescent girls in the both groups.
Inferential statistics	Paired ‘t’ test	To determine the effectiveness of computer assisted teaching on knowledge of anaemia among adolescent girls.
	Chi square	To associate the level of knowledge on anaemia with selected background variables of adolescent girls in both the groups.

CHAPTER-IV
DATA ANALYSIS AND INTERPRETATION

The data were collected from a sample of 70adolescent girls 35 in the intervention group and 35 in the Non – intervention group to find out their knowledge regarding anemia before and after a computer- assisted teaching.

The study findings are presented in this chapter. The findings are arranged in following sections.

The result are presented in 4 sections

Section-A: Distribution of demographic variables of the adolescent in the intervention and non intervention groups.

Section-B: Frequency and percentage distribution of level of knowledge on anemia among adolescent girls and Comparison of mean and standard deviation in the pre and post test knowledge scores among the interventional and non interventional group.

Section-C: Comparison of Mean and standard deviation between intervention and non intervention groups.

Section-D: Association between the knowledge and the selected back ground variable of the adolescent girls in the Intervention and Non intervention group.

Table-1: Frequency and percentage distribution of demographic variables of the adolescent in the intervention and non intervention group

N=70

Demographic variables		Intervention Group n= 35		Non Intervention Group n=35	
		n	%	n	%
Age [in years]	13 – 14	30	85.71	30	85.71
	15 – 16	5	14.29	5	14.29
Religion	Hindu	25	71.43	32	91.43
	Christian	10	28.57	3	8.57
Monthly Family Income	3001 - 4000	15	42 .86	17	5.17
	4001-5000	2	5.71	16	45.71
	5001- above	18	51.43	2	48.57
Educational status of Father	Illiterate	16	45.71	2	5.71
	Primary School	7	20.00	10	28.57
	High School	12	34.29	22	62.86
	Higher Secondary	0	-	1	2. 85
Educational Status of mother	Illiterate	19	54.29	14	40.00
	Primary School	13	37.14	17	48.57
	High School	3	8.57	4	11.43
	Higher Secondary	-	-	1	2.86
Father's occupation	Unemployed	8	22.86	9	25.71
	Coolie	24	68.57	23	65.71
	Skilled concern	1	2.86	2	5.71
	Professional	2	5.71	1	8.57

Demographic variables		Intervention Group n= 35		Non Intervention Group n=35	
		n	%	n	%
Mother's occupation	Skilled	11	31.43	12	34.29
	Semi skilled	17	48.57	21	60.00
	House wife	7	20.00	2	5.71
Media through Which Health information received	Television	21	60.0	18	51.43
	Radio	5	14.29	2	5.71
	News Paper	9	25.71	15	42.86
	Others	0	-	-	-
Personnel for Health Information	Doctor	26	74.29	23	65.71
	Nurse	8	22.86	12	34.29
	MPHW/ ANM	1	2.86	0	0.00

The tables -1 shows that in the intervention group 85.71% (30) of the adolescent girls were in the age group of 13-14 years and 14.29% (5) of the Adolescent girls were in the age group of 15-16 years . In the non Intervention group 85-71(30) of the adolescent girls were in the age group of 13-14 years and 14.29 (5) were in the age group of 15-16 years.

Majority of adolescent girls belong to Hindu religion with 71.43%(25) in the Intervention group and 91.43 %(32) in the Non-Intervention group. The monthly family income among intervention group reveals 18[51.43%] of the parents were getting income more than Rs.5001/ monthiy and 15[42.86] parents were getting income between 3001-4000/monthlyand 2[5.71] parents were getting income bet ween 4001-5000/ monthly. Among non- intervention group16[45.71%] parents were getting income between Rs4001-5000/monthly and 17[48.57%] parents were getting income between Rs3001-4000/monthly. Regarding the educational status of the father ,

of the adolescent reveals that 45.71 % (16) in the Intervention group and (2) 5.71% in the non–intervention group illiterates. In education statue of the mother, adolescent reveals that 54.29%(19) in intervention group and 40.0% (14) in the non-intervention groups are illiterates. Regarding the occupation, majority of the father were coolie the Intervention group 68.57%(24) and in the non – Intervention group 65.71%(23)

Regarding the occupation majority of the mother were semiskilled in the intervention group 48.57%(17) and in the non intervention group 60.0(21)

In relation to the media through which the health information was obtained 60% (21) of the adolescent girls in the intervention group and 51.43%(18) in the non – intervention group obtained information about anaemia through television considering the personnel for health information was obtained 74.29% (26) of the adolescent in the intervention group and (65.71%(23) in the non–intervention group obtained information, through doctor.

Table - 2 : Frequency and percentage distribution of level of knowledge on anaemia among adolescent girls before and after computer assisted teaching

N = 70

Level of knowledge	Intervention Group [n=35]				Non – Intervention Group [n=35]			
	Pre test		Post test		Pre test		Post test	
	n	%	n	%	n	%	n	%
Adequate [76-100%]	-	-	30	85.7	-	-	-	-
Moderately Adequate [51-75%]	19	54.2	5	14.2	6	17.1	15	42.8
Inadequate [0-50%]	16	45.7	-	-	29	82.8	20	57.1

Table-2 In the Intervention group 54.2%(19) of them had moderately adequate knowledge, 45.7% (16) of them had inadequate knowledge during the pre test. In the post test 85.71%(30) of them had adequately knowledge 14.2%(5) of them had moderately adequately knowledge. Among the Non – intervention group, 17.1 % (6) of them had moderately adequate knowledge and 82.8% (29) of them had Inadequate knowledge during the pre test on the post test 42.8% (15) of them had moderately adequately knowledge 57%(20) of them had Inadequate knowledge.

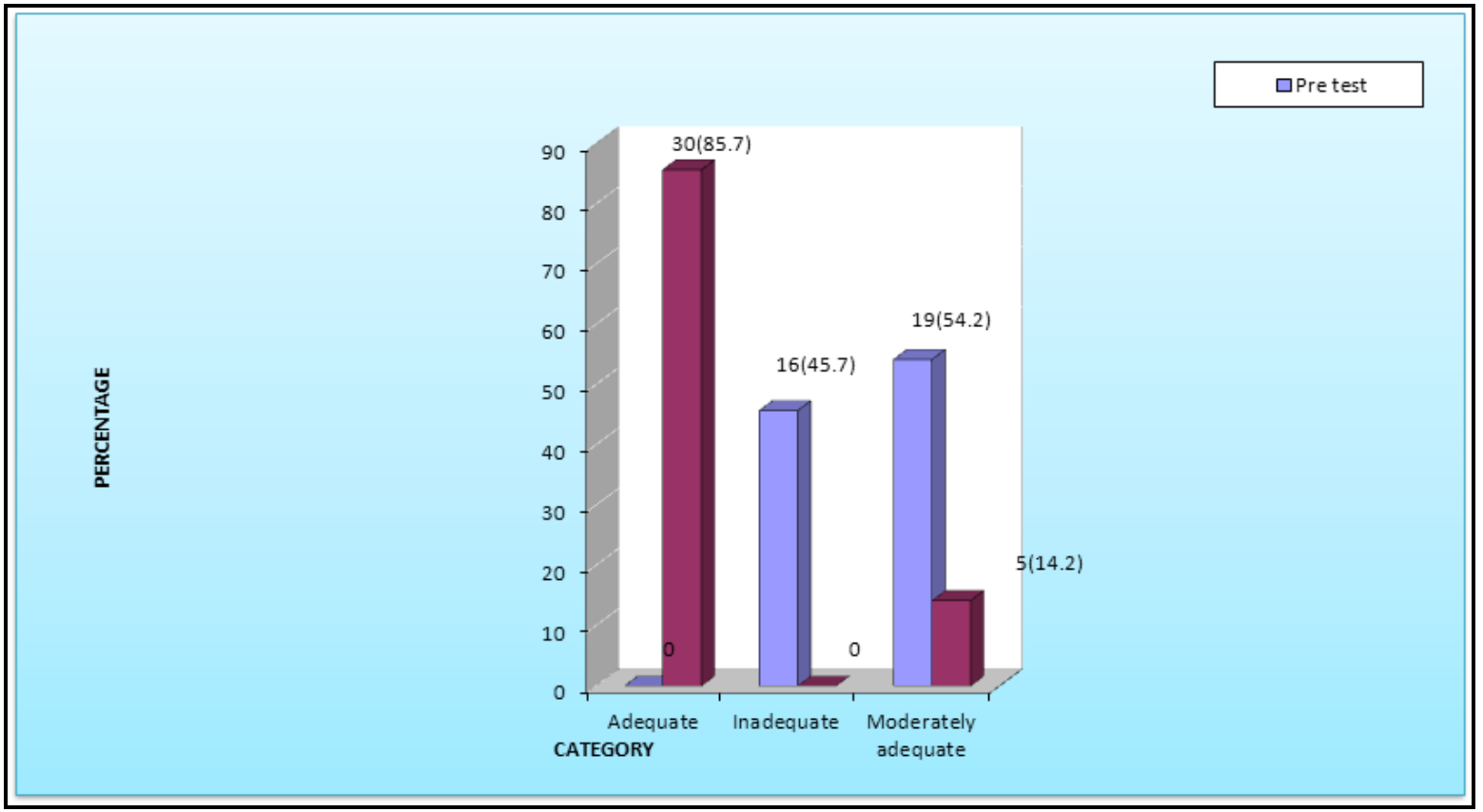

Fig. 2 Percentage distribution of level of knowledge on aneamia among adolescent girls

Table -3: Comparison of mean and standard deviation in the pre and post test knowledge scores among the intervention group. (n=35)

S. No	Variables	Intervention Group						
		Pre test		Post test		Differences Post - Pre		Paired test 't' value
1.	Over all knowledge	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	20.60***
		10.400	1.397	18.943	1.814	8.543	2.454	

P-Value 0.000

Table - 3 Reveals the mean and standard deviation in the pre and post knowledge scores among intervention group. Total pretest mean and post test mean are 10.400 and 18.943 respectively. The difference in mean is 8.543 with standard deviation 2.454, and the 't' value is 20.60 which is highly significant at the level of ' p' - Value 0.000.

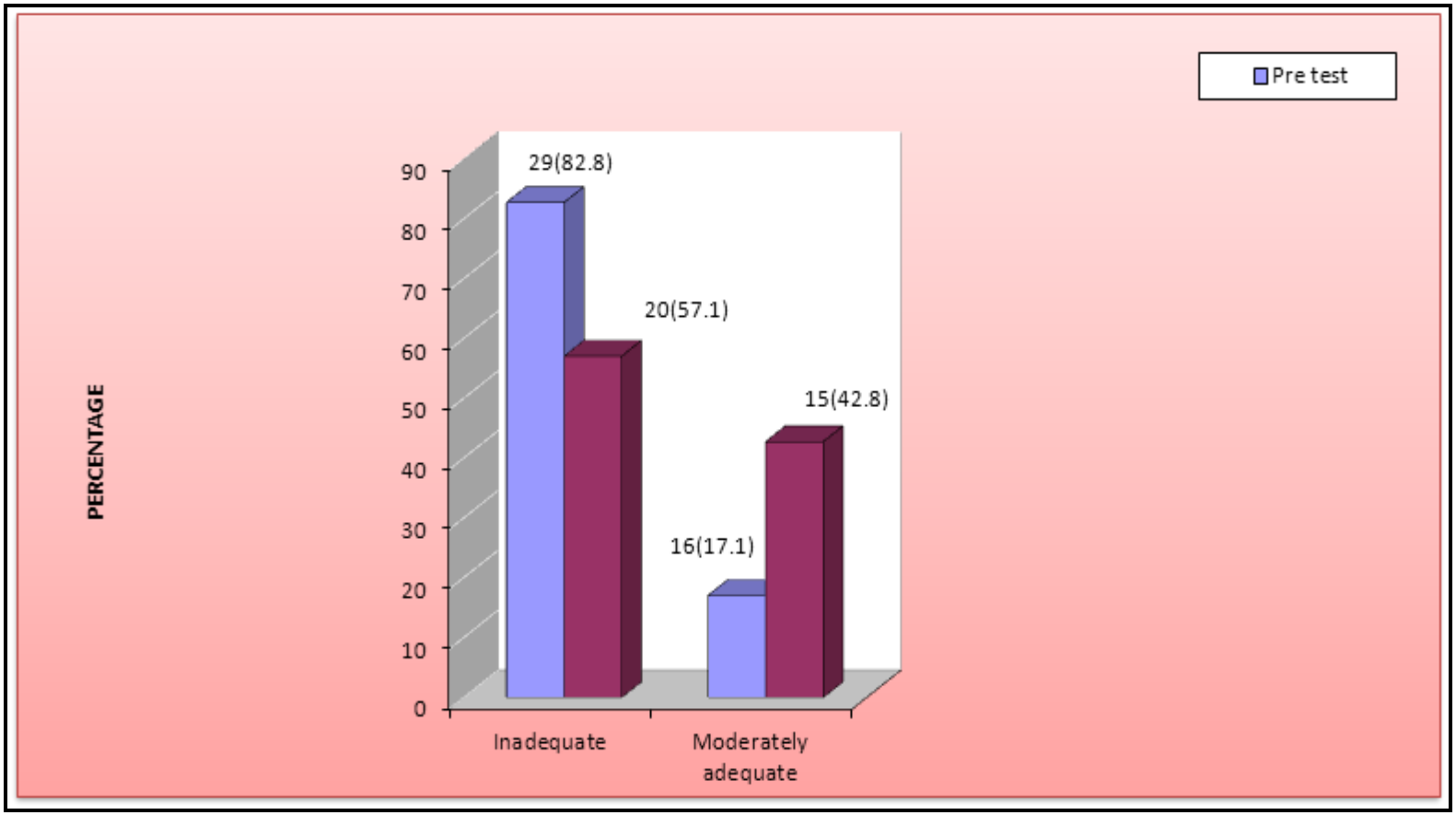

Fig. 3 Percentage distribution of level of knowledge on aneamia among adolescent girls

Table - 4: Comparison of mean and standard deviation in the pre and post test knowledge scores among the Non Intervention group.

Variables	Non Intervention Group						
	Pre test		Post test		Difference Post - Pre		Paired test 't' value
					Mean	SD	
Over all Knowledge	Mean	SD	Mean	SD	Mean	SD	
	10.200	1.106	10.314	2.011	0.114	2.665	0.25

P – Value – 0.801

Table – 4 Reveals the mean and standard deviation in the pre and post test knowledge score. Total pretest and post test mean values are 10.200 and 10.314, difference in. mean is 0.114 with standard deviation 2.665 and 't' value is 0.25 which is not significant.

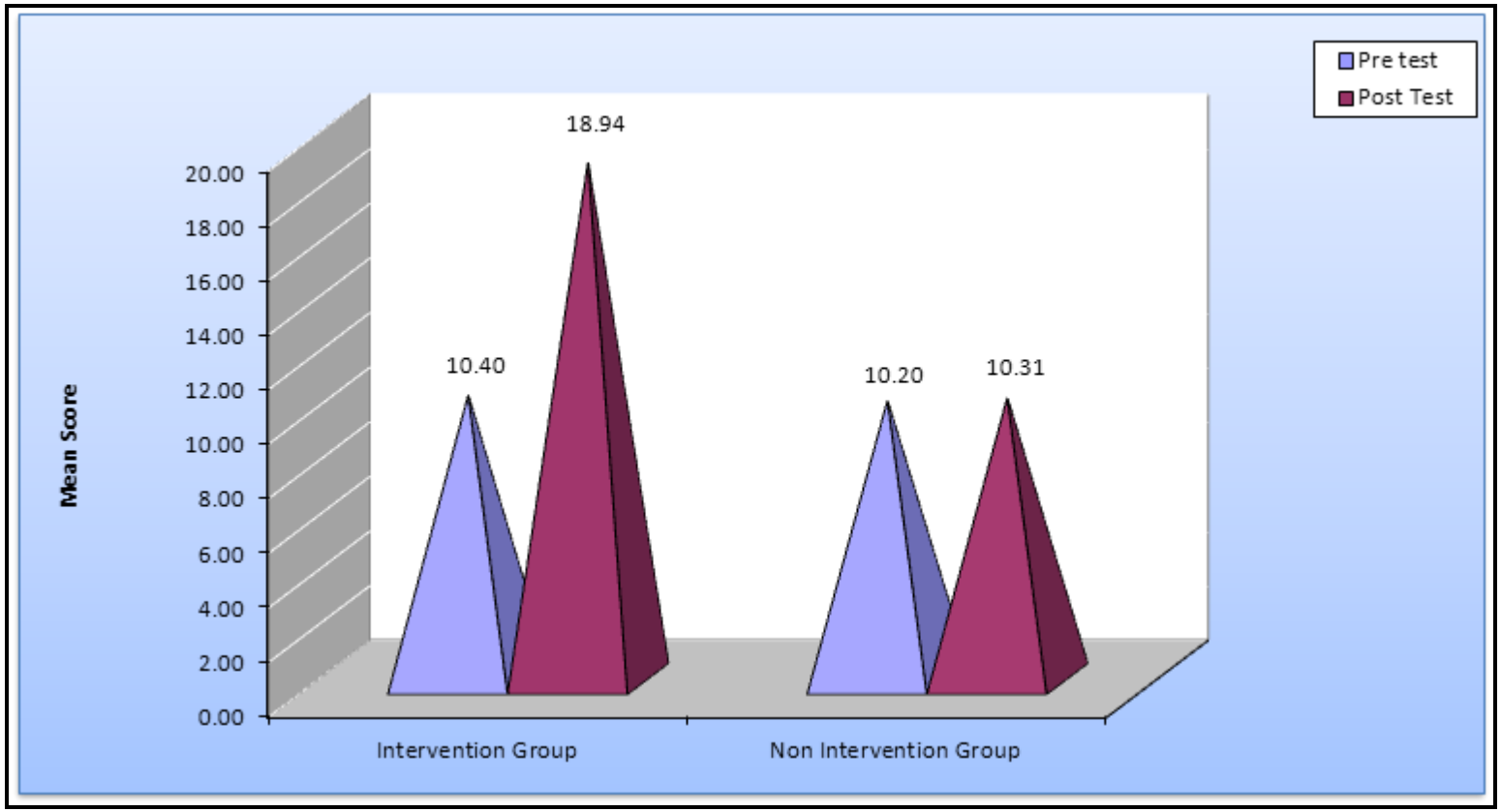

Fig. 4 Comparisons of Mean Standard Deviation in Pre test Post Test Knowledge score among interventions and non intervention

Table – 5 :Comparison of mean and standard deviation between intervention and Non intervention group before and after computer assisted teaching

N=70

Anaemia	Intervention Group				Non-Intervention Group				Independent 't' value
	Mean		SD		Mean		SD		
	Pre test	Post test	Pre test	Post test	Pre test	Post test	Pre test	Post test	
Total	10.40	18.94	1.40	1.81	10.20	10.31	1.11	2.01	0.66

P – Value – 0.509

Table–5 Reveals the mean and standard deviation between intervention and Non intervention group. The pre and post test mean was 10.40 and18.94 with the standard deviation of 1.40 and 1.81. In the Non intervention group pre and post test mean is 10.20 and 10.31 with standard deviation 1.11 and 2.01, Independent – 't' value is 0.66. which is statisticaly significant at the P- value 0.509 .

Table-6 Association Between the Knowledge and we selected background variables of the adolescent girls in the intervention School Intervention Group

N=35

Demographic variables		n	Pre test		Post test	
			Below Average	Above Average	Below Average	Above Average
Religion	Hindu	22	2	20	3	14
	Christian	13	2	11	3	15
			X2 0.38 df = 1 p>0.05		X2 0.003 df = I p>0.05	
Educational status of Father	Illiterate	21	6	15	10	12
	High School and above	14	3	11	7	7
			X2 0.26 df = 1p>0.05)		X2 0.082 df = I p>0.05	
Educational status of Father	Illiterate	20	5	15	1	11
	High School	15	3	12	11	12
	above		X2 0.12 df = 1p>0.05		X2 5.5 df = 1 p>0.05*	
Occupation of Father	Un Employed	22	2	20	9	12
	Coolies and Offer	13	2	11	3	11
			X2 0.38 df = 1p>0.05)		X2 1.5 df = 1 p>0.05)	
Media for Health Information	Television	19	8	11	5	12
	Rodia	16	4	12	4	14
			X2 01.9 df = 1 p>0.05)		X2 0.23 df = 1 p>0.05	

Demographic variables		n	Pre test		Post test	
			Below Average	Above Average	Below Average	Above Average
Personal for health information	Docter	17	3	14	7	12
	Nurses Others	18	3	15	5	11
			X2 0.0036 df = 1p>0.05		X2 7.9 df = 1 p>0.05*	

P<.05

Note : Pretest average [mean : 10.4] Post test [mean 18.9] .

Table : shows that intervention group on the post test there was significant relationship between the knowledge in the mother education.

Table-7 Association Between the Knowledge and we selected background variables of the adolescent girls in the Non intervention School Intervention Group

N=35

Demographic variables		n	Pre test		Post test	
			Below Average	Above Average	Below Average	Above Average
Religion	a. Hindu	21	2	19	4	15
	b. Christian	14	2	12	5	11
			X2 0.24df = 1 P>0.05		X2 0.42 df = I p>0.05	
Educational status of Father	a . Illiterate	21	6	15	5	16
	b. High School and above	14	3	11	3	11
			X2 0.21 df = 1p>0.05)		(X2 0.023 df = I p>0.05)	
Educational status of Mother	a. Illiterate	18	5	13	1	11
	b. High School and above	17	3	14	3	20
			X2 0.28 df = 1 p>0.05)		(X2 0.13 df = 1 p>0.05)	
Occupation of Father	a. Un Employee	21	6	15	4	17
	b. Coolie and Other	14	3	11	3	11
			X2 0.21 df = 1p>0.05		X2 0.024 df = 1p>0.05)	

Demographic variables		n	Pre test		Post test	
			Below Average	Above Average	Below Average	Above Average
Media for Health Information	a . Television	17	5	12	2	15
	b. Rodia and Other	18	5	13	4	14
			X2 0.02 df = 1 p>0.05		X2 0.61 df = 1 p>0.05	
Personal for health information	a . Doctor	19	7	12	2	14
	b. Nurses and Others	16	5	11	1	18
			X2 7.9 df = 1 p>0.01*		X2 0.06 df = 1 p>0.05	

P<.05

Note : Pretest average [mean : 10.4] Post test [mean 18.9] .

Table : shows that non intervention group on the post test there was significant relationship between the knowledge in the personal for health information.

CHAPTER- V
DISCUSSION

The main focus of this study is to assess the effectiveness of computer assisted teaching on knowledge of anaemia among adolescent girls in selected school at poigai total of 70 samples of adolescent girls studying in 9th standard were selected by simply random Sampling technique

THE FIRST OBJECTIVE

Assess the knowledge on anaemia among the adolescent girls in the interventionalal and non interventionalal groups.

A self administered questionnaire was used to assess the level of knowledge of adolescent girls after the computer assisted teaching on anaemia, Table- 2 reveals that the level of knowledge on anaemia among adolescent girls in the interventional group, 19[54.2%] of them had moderately adequate knowledge, 16[45.7%]of them had inadequate knowledge during the pre test . In the post test, 30[85.7%] of them had adequate knowledge , 5 [14.2%] of them had moderately adequate knowledge.

Among the non-interventionalal group, 6[17.1 %] of them had moderately adequate knowledge, 29[82.8%] of them had inadequate knowledge in the pre test. The post test reveals 15 [42.8%] of them had moderately adequate knowledge, 20[57%] of them had inadequate knowledge.

Maciej and Steven [2002] conducted a computer assisted teaching on nutritional anaemia to first year medical students . The goal of this study was to evaluate the instructional efficacy of the nutritional anaemia modules students were divided into 20 in each group. Study group required to answer. The multiple choich questions on anaemia,

72% of the students correctly answered . They found a significant increase in the knowledge had after the instruction .

The study also revealed a significant increase of knowledge on anaemia of adolescent girls after computer assisted teaching .

THE SECOND OBJECTIVE

Determine the effectiveness of computer assisted teaching on the knowledge of anaemia among the adolescent girls . Table -3 reveals the mean and the standard deviation in the pre and post test knowledge scores among the interventional group .

Total pretest mean and post test mean were 10.40 and 18.94 respectively with a standard deviation of 1.397 and 1.814 and t' value was 20.60 which was highly significant at p' Level of 0.000. so hypothesis was accept.

THIRD OBJECTIVE

Associate the level of knowledge on anaemia with the selected back ground variables among the adolescent girls in both groups. Table; 6 reveals the association of selected demographic variables with knowledge on anaemia among adolescent in the interventional group. It shows that on the post test there was a significant association between the knowledge of adolescent girls and the mothers education [P'< .05]. There was no significant association between the other selected demographic variables and the knowledge on anaemia among adolescent girls . Table -7 reveals the association of selected demographic variables with knowledge on anaemia among adolescent girls in the non-interventional group. It shows that in the pretest there was a significant association between the knowledge acquired by the adolescent girls and the personnal through whom the health 'information was transferred,

There was no significant association between other seiected deographic variables and the knowledge on anaemia among adolescent girls.

This study supported the conceptual frame work based on J.K.Kennys open system model which is shown in figure 1. computer assisted teaching programme was effective in transforming the knowledge on anaemia to the adolescent girls.

- One post test was administered two weeks after the teaching .
- Adolescent girls studying in 9^{th} standard were included.
- Testing of long term retention of knowledge was not possible since data collection period was limited to two weeks.

CHAPTER – VI
SUMMARY AND RECOMMENDATIONS

This chapter presents the summary of the study, conclusions, implications and recommendations for further researches.

A SUMMARY OF THE STUDY

The study was conducted to determine the effectiveness of computer assisted teaching on knowledge of anaemia among adolescent girls in selected schools at Mugalivakkam and Nemam . pre and post test two group design was used for this study. The conceptual frame work of this research was based on J.W . Kennys open system model.

The instrument used for data collection was self administered questionnaire on anaemia to assess the Level of knowledge of the samples through pretest and post test measures .

A sample of 35 adolescent girls were selected from two schools 35 for the interventional group and 35 for the non interventional group were assigned using by the simple random sampling method . Descriptive statistics [frequency, percentage , mean ,standard deviation] and inferential statistics [paired t' test independent t' test and chi- square] were used to analyze the data to test the study hypothesis.

The study findings on the Level of knowledge on anaemia of the interventional group showed that 19[54.2%] of them had moderately adequate knowledge ,16[45.7] of them had inadequate knowledge during the pretest. In the post test, after computer assisted teaching 30[85.7%] of them had adequate knowledge 5[14 .2%] of them had moderately adequate knowledge, .Among the non interventional group

6[17.1%] of them had moderately adequate knowledge ,29[82.8%] of them had inadequate knowledge in the pre test. The post test reveals that 15[42.8%] of them had moderately adequate knowledge, 20[57%]of them had inadequate knowledge . This reveals that 85.7% had gained adequatel knowledge through the computer assisted teaching on anaemia .

There was a highly significant increase in knowledge between the intervention group and non intervention group with the independent t' value of 0.66 which was statisticaly significant at a p' level of 0.509. The computer assisted teaching was conducted using lecture cum discussion method which was effective in increasing the knowledge regarding anaemia among adolescent girls .

There, was a significant relationship between the knowledge of the mothers education and the knowledge of the adolescent girls at the p' level of <0.05 for the interventional group The non intervention group showed that in the post test there was a significant relationship between the knowledge of the personnel approched for health information and the knowledge of the adolescent girls. There was no significant association between other selected demographic variables and the knowledge on anaemia among both the groups.

CONCLUSIONS

The following conclusions were made from the study findings. The majority of the adolescents had inadequate knowledge regarding anaemia. Computer assisted teaching on anaemia proved to be an effective method to increase the knowledge among the adolescent girls.

There was a significant increase in the level of knowledge on anaemia among adolescent girls in the intervention group. The finding of the study were consistent to review of literature and supported the study done in different parts of rural India .

IMPLICATIONS FOR NURSING

The community which is pre dominantly a place of primary prevention is in need of appropriate health education. Health education is a strong weapon preventing major health problems at an early stage. Hence nurses working in the community have to realize there responsibility in giving health education to the adolescent girls regarding prevention of anaemia. Nurses can take active part in conducting mass health awareness programme regarding prevention of anaemia .

The implications drawn from the present study is of vital concern to the health team including the professional nurse practitioners , nurse administrators, nurse educators and researchers.

IMPLICATION FOR NURSING PRACTICE

The nurses working in the community setting should conduct health education in the schools for adolescents .The present study revealed that most of the adolescent girls had inadequate knowledge in the pretest. regarding anaemia. Increased efforts should be made by all the community health nurse to increase knowledge and awareness regarding prevention of anaemia among adolescents .The community health nurse should take effort in conducting more health education programmes on preventive aspects of anaemia periodically in the community, school setting since adolescent is the curious behavioral formation period so proper dissemination of information is needed for the

maintenance of good health to build a healthy nation in the future

IMPLICATION FOR NURSING ADMINISTRATION

The problem of anaemia is increasing abrupt and the health problems related to it can be prevented by appropriate health education. Community health nurse administrator should focus on primordial prevention of anaemia to prevent its impact in later life .

Health awareness on prevention of anaemia should be conducted by community health nurse through camps, rallies and mass health awareness programmes. Community health nurse administrator should recommend school and college authorities to include preventive programmes on anaemia as a part of the co-curricular activities. Leaders in nursing practice should take active part of the is recommending the low cost nutritional supplementation and illuminate the effectiveness of it to the policy makers to introduce in the community at large scale.

IMPLICATION FOR NURSING EDUCATION

The community health nursing curriculum needs to be strengthened to enable nursing students to identify the causes, signs and symptoms and prevention of anaemia community health nurse educator should plan and conduct in-service education programme on anaemia to enable preventive measure for nurses working at the grass root level in the community and also to teachers in schools as a link between the community and health care system being in this position she could make a differences by providing suggestions to other health care professionals prevention of anaemia and by making health care services accessible for

the adolescent population involving parents teachers and the influential leaders in the community.

IMPLICATIONS FOR NURSING RESEARCH

More research is needed on different strategies of prevention among the adolescents. The nurses and nursing students should be encouraged to do research in the field of interest regarding prevention and management of anaemia among adolescents . Further researches are to be under taken to assess the adolescents who are at risk of developing anaemia .

RECOMMENDATIONS FOR FURTHER RESEARCH

1) A. Similar study can be conducted among female adolescents in the rural settings.

2) B. A comparative study can be conducted between urban and rural adolescent girls.

3) C. Similar study can be conducted among adolescent studying at private schools .

4) D. Interventional studies can be conducted among adolescents with anaemia.

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LETTER REQUESTED OPINION AND SUGGESTION OF EXPERTS FOR ESTABLISHING CONTENT VALIDITY OF RESEARCH

CERTIFICATION FOR CONTENT VALIDITY

This is to certify that the tool to the statement of the problem "A STUDY TO ASSESS THE EFFECTIVENESS OF COMPUTER ASSISTED TEACHING ON KNOWLEDGE OF ANEMIA AMONG ADOLESCENT GIRS IN SELECTED SCHOOL AT VELLORE DISTRICT " Prepared by M.S. Manjambigai M.Sc (NSG) second year student currently pursuing her M.sc (NSG) degree programme for the partial Fulfillment of her dissertation at Arun college of nursing is found to be valid to the best of by knowledge.

Signature

DEMOGRAPHIC VARIABLES

1. Age in years
   a. 13-14
   b. 15-16
   c. 17-18

2. Religion
   a. Hindu
   b. Christian
   c. Muslim
   d. Others

3. Monthly Family Income
   a. 5001 above
   b. 4001 -5001
   c. 3001 -4000

4. Educational Status of father
   a. Illiterate
   b. Primary School
   c. High School
   d. Higher Secondary

5. Educational status of mother
   a. Illiterate
   b. Primary school
   c. High school
   d. Higher secondary

6. Occupation of father
    a. Unemployed
    b. Coolie
    c. Skilled concern
    d. Professional

7. Occupation of mother
    a. Skilled
    b. Semi skilled
    c. Housewife

8. Media through which health information is obtained
    a. Television
    b. Radio
    c. Newspaper
    d. Other

9. Personnel through whom health information is obtained
    a. Doctor
    b. Nurse
    c. MPHW/ANM
    d. Other

PART - II

	QUESTIONNNAIRE	Score
1.	Anaemia means	
	a. Reduction in red blood cells	1
	b. Decreased white blood cells	0
	c. Increased fat	0
	d. decreased fluid	0
2.	Anaemia is caused by	
	a. Nutritional deficiency and blood loss	1
	b. Bacteria and virus	0
	c. Lack of exercise	0
	d.standards of living	0
3.	Common symptoms of anaemia	
	a. Headache	0
	b. Weakness	0
	c. Pallor	1
	d. Vomiting	0
4.	function of Iron	
	a. Formation of hemoglobin and brain development	1
	b. Formation of calcium	0
	c. Formation of potassium	0
	d.formation of plasma	0
5.	Absorption iron	
	a. Duodenum and upper small intestine	1
	b. Absorption from liver	0
	c. Absorption pancreas	0
	d. stomach	0

6.	Iron Requirements for an adolescents	
	a. 2.4 gms	1
	b. 5.6 gms	0
	c. 7.8 gms	0
	d. > 8 gms	0
7.	Loss of iron during menstrual cycle is	
	a. 1mg to 2mg	1
	b. 3mg to 4 mg	0
	c. 5mg to 6 mg	0
	d. > 6mg	0
8.	Deficiency of iron causes	
	a. Anaemia	1
	b. Malnutrition	0
	c. Xer phthalimia	0
	d.Beri-beri	0
9.	Rich Animal source of iron	
	a. Liver	1
	b. Meat	0
	c. Fish	0
	d. Egg	0
10.	Rich vegetable source of iron is from	
	a. green leaf vegetables	1
	b.rice	0
	c. Dhal and oil	0
	d. wheat	0

11. Diet for anemia is	
a. Protein diet	0
b. Iron rich diet	1
c. Salt restricted diet	0
d. High fat diet	0
12. Best management of anemia	
a. Diet	0
b. Medication	1
c. Surgery	0
d. Education	0
13. Anemia is more common in	
a. Men	0
b. Women	1
c. Children	0
d.old age	0
14. Dosage of Iron for anamic women is	
a. 60 mg.	1
b. 100 mg .	0
c. 150.	0
d.0.6mg	0
15. Dosage of folic acid for anaemic women is	
a. 0.5mg	1
b.0.6mg	0
c. 0.7mg	0
d .0.9mg	0

16. Major routs of iron loss	
a. Hemorrhage	1
b. Vomiting	0
c. Diarrhoea	0
d. fever	0
17. Rich animal sources of iron	
a. Meat	0
b. Liver	1
c. Fish	0
d. Egg	0
17. Rich vegetables sources of iron	
a. Green leaf vegetables	1
b. Rice,	0
c. Wheat	0
d.egg	0
18. In women blood loss is by	
a. Monthly periods	1
b. Faeces	0
c. Urine	0
d.injuries	0
19. In women blood loss is during	
a. Pregnancy	0
b. Delivery	1
c. After delivery	0
d.Breast feeding	0

20. Simple test to identify anaemia in women

a. Conjunctival examination	1
b. Physical examination	0
c. Blood test	0
d.urine test	0

21. Worms that cause anaemia

a. Round worms	0
b. Hook worms	1
c. Pin worms	0
d. tape worm	0

SN Sample Number

A – Age

a. 13 – 14
b. 15 – 16
c. 17 – 18

R – Religion

a. Hindu
b. Christian
c. Muslim
d. Other

MI – Monthly Income

a. 5001 above
b. 4001 – 5001
c. 3001 – 4000

EDU FAT – Educational Status of Father

a. Illiterate
b. Primary School
c. High School
d. Higher Secondary

EDU MOT – Educational Status of Mother

a. Illiterate
b. Primary School
c. High School
d. Higher Secondary School

FAT OCC – Father Occupation

a. Unemployed
b. Coolie
c. Skilled Concern
d. Professional

MOT OCC – Mother Occupation

a. Skilled
b. Semi Skilled
c. House Wife

HI – Health Information

a. Television
b. Radio
c. News Paper
d. Other

PHI – Personal Health Information

a. Doctor
b. Nurse
c. MPHW/ANM
d. Other

ADEQ – Adequate

MA – Moderate Adequate

IK – Inadequate Knowledge

ARUN COLLEGE OF NURSING

(A unit of Arun Educational Trust)
Affiliated with The Tamilnadu Dr. M.G.R. Medical University,
Tamilnadu Nursing Council & Indian Nursing Council, G.O.M.S. 369/16.11.2008.
No.15, Thiyagarajapuram, Vellore - 1.

Mr. **L.Adhimoolam**
Managing Director

Principal

PERMISSION LETTER

Ref. No.

Date : .....

From,

M.Manjambigai
M.Sc., Nursing II Year
Arun college of nursing
Vellore – 1

To,

The Head master
Higher secondary school,
Poigai
Vellore district

Respected sir / Madam,

Sub : Request for permission to conduct research in your reputed Organization.

I am a post graduate student of Arun College of Nursing. I have selected the below mentioned topic for research to be submitted to the Tn.MGR Medical University Chennai, as a partial fulfilment of Nursing degree.

With regards may I kindly request you to grant me permission to carry on my Research study in your reputed Organization I assure ,my study wouldn"t harm any of the clients in your organization .
I would be greatly thankful for your help.

Thanks & Regards

PRINCIPAL

PRINCIPAL
ARUN COLLEGE OF NURSING
No 15, THIYAGARAJAPURAM
VELLORE - 632 001

Ph : 0416 - 2222081 E-mail : principalaruncollege@gmail.com

Research Participant Consent Form

I' am an M.Sc., Nursing student Arun College of Nursing Vellore. As a part of my study a research on " Effectiveness of computes Assisted Teaching on the knowledge of Anaemia among Adolescent Girls in selected School at Poigai is selected to be conducted. The findings of the study will be the effect of computes Assisted Teaching the knowledge of Anaemia Among Adolescent girls. They are getting Adequate knowledge Anaemia.

I here by seek your consent and co – Operation to participate in the study. Please be frank and honest in your responses. The information collected will be kept confidential and anonymity will be maintained.

Signature of the Researcher
Ms. Manjambigai . M

I ---------- here by consent by participate and under go the study

Signature of the Participant

CONTENT VALIDITY CERTIFICATE

I hereby certify that I have validated the research tool of **Ms.Manjambigai.S, M.Sc (N).,** Student of Arun College of Nursing, Vellore who is undertaing research study on **"Effectiveness of Computer Assisted Teaching on the Knowledge of Anemia among Adolescent Girls"**

24/7/11

Signature of the Expert
Director
Institute of Community Medicine
Madras Medical College & RGGGH
Chennai - 600 003.

Place:

CONTENT VALIDITY CERTIFICATE

I hereby certify that I have validated the research tool of Ms.M.Manjambigai, M.Sc.(Nursing) student of Arun College of Nursing, Vellore who is undertaking research study on **"Effectiveness of Computer Assisted Teaching on the Knowledge of Anemia among Adolescent Girls"**

A. N. Kalpana
Signature of the Expert

MASTER CODE SHEET

S. No	DEMOGRAPHIC VARIABLE																		LEVEL OF KNOWLEDGE											
	Intervention Group									Non-Intervention Group									Intervention Group						Non-Intervention Group					
																			Pre Test			Post Test			Pre Test			Post Test		
	AGE	REL	MIN	EDU FAT	EDU MOT	FAT OCC	MOT OCC	HI	PHI	AGE	REL	MIN	EDU FAT	EDU MOT	FAT OCC	MOT OCC	HI	PHI	ADEQ	MA	IK	ADEQ	MA	IK	ADEQ	MA	IK	ADEQ	MA	IK
1	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a		MA	IK	AK	MA			MA	IK		MA	IK
2	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a		MA	IK	AK	MA			MA	IK		MA	IK
3	a	a	a	a	a	a	a	a	a	a	a	a	b	a	a	a	a	a		MA	IK	AK	MA			MA	IK		MA	IK
4	a	a	a	a	a	a	a	a	a	a	a	a	b	a	a	a	a	a		MA	IK	AK	MA			MA	IK		MA	IK
5	a	a	a	a	a	a	a	a	a	a	a	a	b	a	a	a	a	a		MA	IK	AK	MA			MA	IK		MA	IK
6	a	a	a	a	a	a	a	a	a	a	a	a	b	a	a	a	a	a		MA	IK	AK				MA	IK		MA	IK
7	a	a	a	a	a	a	a	a	a	a	a	a	b	a	a	a	a	a		MA	IK	AK					IK		MA	IK
8	a	a	a	a	a	a	a	a	a	a	a	a	b	a	a	a	a	a		MA	IK	AK					IK		MA	IK
9	a	a	a	a	a	b	a	a	a	a	a	a	b	a	a	a	a	a		MA	IK	AK					IK		MA	IK
10	a	a	a	a	a	b	a	a	a	a	a	a	b	a	b	a	a	a		MA	IK	AK					IK		MA	IK
11	a	a	a	a	a	b	a	a	a	a	a	a	b	a	b	a	a	a		MA	IK	AK					IK		MA	IK
12	a	a	a	a	a	b	b	a	a	a	a	a	b	a	b	a	a	a		MA	IK	AK					IK		MA	IK
13	a	a	a	a	a	b	b	a	a	a	a	a	c	a	b	b	a	a		MA	IK	AK					IK		MA	IK
14	a	a	a	a	a	b	b	a	a	a	a	a	c	a	b	b	a	a		MA	IK	AK					IK		MA	IK
15	a	a	a	a	a	b	b	a	a	a	a	a	c	b	b	b	a	a		MA	IK	AK					IK		MA	IK
16	a	a	b	a	a	b	b	a	a	a	a	a	c	b	b	b	a	a		MA	IK	AK					IK			IK
17	a	a	b	b	a	b	b	a	a	a	a	a	c	b	b	b	a	a		MA		AK					IK			IK
18	a	a	c	b	a	b	b	a	a	a	a	b	c	b	b	b	a	a		MA		AK					IK			IK
19	a	a	c	b	a	b	b	a	a	a	a	b	c	b	b	b	b	a		MA		AK					IK			IK

S. No	DEMOGRAPHIC VARIABLE																		LEVEL OF KNOWLEDGE											
	Intervention Group									Non-Intervention Group									Intervention Group						Non-Intervention Group					
																			Pre Test			Post Test			Pre Test			Post Test		
	AGE	REL	MIN	EDU FAT	EDU MOT	FAT OCC	MOT OCC	HI	PHI	AGE	REL	MIN	EDU FAT	EDU MOT	FAT OCC	MOT OCC	HI	PHI	ADEQ	MA	IK	ADEQ	MA	IK	ADEQ	MA	IK	ADEQ	MA	IK
20	a	a	c	b	b	b	b	a	a	a	a	b	c	b	b	b	b	a				AK					IK			IK
21	a	a	c	b	b	b	b	a	a	a	a	b	c	b	b	b	c	a				AK					IK			
22	a	a	c	b	b	b	b	b	a	a	a	b	c	b	b	b	c	a				AK					IK			
23	a	a	c	b	b	b	b	b	a	a	a	b	c	b	b	b	c	a				AK					IK			
24	a	a	c	c	b	b	b	b	a	a	a	b	c	b	b	b	c	b				AK					IK			
25	a	a	c	c	b	b	b	b	a	a	a	b	c	b	b	b	c	b				AK					IK			
26	a	b	c	c	b	b	b	b	a	a	a	b	c	b	b	b	c	b				AK					IK			
27	a	b	c	c	b	b	b	c	b	a	a	b	c	b	b	b	c	b				AK					IK			
28	a	b	c	c	b	b	b	c	b	a	a	b	c	b	b	b	c	b				AK					IK			
29	a	b	c	c	b	b	c	c	b	a	a	b	c	b	b	b	c	b				AK					IK			
30	a	b	c	c	b	b	c	c	b	a	a	b	c	b	b	b	c	b				AK								
31	b	b	c	c	b	b	c	c	b	b	a	b	c	c	b	b	c	b												
32	b	b	c	c	b	b	c	c	b	b	a	b	c	c	b	b	c	b												
33	b	b	c	c	c	c	c	c	b	b	b	b	c	c	c	b	c	b												
34	b	b	c	c	c	d	c	c	b	b	b	c	c	c	c	c	c	b												
35	b	b	c	c	c	d	c	c	c	b	b	c	d	d	d	c	c	b												

OVER ALL OBJECTIVES

Help the adolescent girls to acquire their knowledge and understanding regarding, meaning, causes signs and symptoms, functions, management, requirement, source, absorption and iron loss etc.,

CONTRIBUTORY OBJECTIVES

The Adolescent girls after attending the computer assisted teaching will be able to

1. State the meaning of anaemia
2. List out the cause of anaemia
3. Identify the signs and symptoms of anaemia
4. enumerate the function of iron
5. Understand the iron requriement
6. Enumerate the management of anaemia
7. understand the iron loss.

STRUCTURED TEACHING PROGRAMME REGARDING ANAEMIA

S. No.	Time	Behavioral Objectives	Content	Educational Activity	Student Responses
1.	2 min	State the meaning of Anaemia	**ANAEMIA** **Definition:** Anaemia is reduction in red blood cells which in turn deceased the oxygen carrying capacity of the blood.	Explaining by using Lap top.	Listening taking down the notes
2.	2 min	List out the causes of Anaemia .	CAUSES;		
			(i) Excessive blood loss. (ii) Deficiency of abnormalities of red blood cell production a. (iii)Infection[malaria] (iv)Intestinal parasites [V]PRMNN	MNlaining by using flash cards.	
	3 min	Identity the signs and symptoms of anaemia	**Clinical Manifestation:** ❖ Pysphoea ❖ Palpitations ❖ Chronic fatique ❖ Pale ❖ Loss of appetite	Explaining by using flash cards	

S. No.	Time	Behavioral Objectives	Content	Educational Activity	Student Responses
			❖ Weakness, dizziness ❖ Headache		
	2 min	Understand the diagnostic test of anemia	**Diagnostic assessment:** The diagnostic test mainly on blood test. Physical assessment and examinations. Red blood cells counts Bone marrow specimen and peripheral blood smear.		
	2 min	Discuss the management of anemia.	**Medical Management:** Controlling the causes Relieving the symptoms Preventing the complications Specific interventions for example iron preparation and diet can cure Iron deficiency injection Vit B12 control pernicious Anemia. Oxygen therapy may be prescribed for client with anemia. Blood transfusion Red blood cells support.	Explaining by using flash cards	
			Pharmacological Management:		

S. No.	Time	Behavioral Objectives	Content	Educational Activity	Student Responses
			Iron 60mgs and 0.5 mg folic acid should be given deferoxamine is an iron agent that can prevent iron overload when it is properly administered (Intra venous infusion). Iron and Vit. B12 can be given when the client has anemia due to deficiency of these elements.		
	2 min		**Dietary Management:** When anemia is related to poor nutrition. Proper nutrition can improve the red blood cells production. A diet high in Iron. Vitamin B12 and Folic acid will help increase red blood cell production. Green leaf vegetables, Jaggery, dried foods, nuts etc.		
		Point out the complication of Anemia	**Complications:** Congestive heart failure and confusion at any given level. Angina		
			Iron: Iron is of great important in human nutrition. The adult human body contains between 3-4 g of iron of which about 60-70 percent is present in the blood. Each gram of heamoglobin contains about 3.34 mg of iron. Functions:	Explaining by using flash cards	Listening and taking down the notes

S. No.	Time	Behavioral Objectives	Content	Educational Activity	Student Responses
			Iron is necessary for many functions in the body including formation of hemoglobin, brain development and function, regulation of body temperature, muscle activity. Sources: Cereals, green leafy vegetables, nuts, jaggery, dried fruits, meat fish liver etc.		
	2 mins		**Absorptions:** Absorbed from derodenum and upper small intestine according to body needs.	Explaining by using flash cards.	
			Iron losses: Adult is probably 1 mg and about 2 mg in menstruating women		
			Iron requirement: Adolescent female 2-4 years male 1.8 gms menstruation 2.8 gms		
			Storage: Absorbed iron is stored into Liver, spleen, bore marrow etc.		